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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,902	02/25/2005	Kazuhiro Yagishita	CU-4101 RJS	9193
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LADAS & PARRY LLP 224 SOUTH MICHIGAN AVENUE SUITE 1600 CHICAGO, IL 60604			EXAMINER GOLOBOY, JAMES C	
			ART UNIT 1714	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/525,902

**Applicant(s)**

YAGISHITA, KAZUHIRO

**Examiner**

James Goloboy

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 4 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/25/05 &amp; 2/23/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 5-8 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on another multiple dependent claim. Specifically, claim 5 depends on multiple dependent claim 3, claim 6 depends on claims 3 and 5, claim 7 depends on claims 3 and 5-6, and claim 8 depends on claims 3 and 5-7. See MPEP § 608.01(n). In the interest of compact prosecution, the claims have been considered on the merits pending rectification.

2. Claim 4 is objected to because of the following informality: "a" should be changed to "the" in line 2 of the claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 9-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 9-10 are method claims, but do not recite any method steps.

### ***Claim Rejections - 35 USC § 102***

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5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Carrick (U.S. Pat. No. 6,583,092).

In columns 27-28, Carrick discloses a composition (composition 2) comprising a borate ester (tri-n-butyl borate), in an amount sufficient to give the composition a boron concentration of 0.0543% by weight, meeting the limitations of claim 1(A). The composition also includes a total of 2.1% by weight of nonylated diphenylamine and sulfurized cyclic olefin ester, ashless dispersants meeting the limitations of claim 1(B). It is noted that composition 2 of Carrick does contain a zinc dialkyldithiophosphate, and the sulfur content is slightly greater than 0.2% (0.2045%) by weight. However, in column 13 lines 16-42 Carrick teaches that the phosphorus-containing metal salt may have more than or less than two sulfur atoms, as the X atoms in structure D-I of Carrick are independently oxygen or sulfur. The use of a metal salt that contains less than two sulfur atoms also lowers the sulfur content of the composition below 0.2% by mass. Therefore, the composition of claim 1 is anticipated by Carrick.

***Claim Rejections - 35 USC § 103***

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robson (U.S. PG Pub. No. 2003/0148895) in view of Emert (U.S. Pat. No. 5,498,809).

In paragraphs 1-2, Robson discloses a lubricating composition for parts of an internal combustion engine, including valve trains as recited in claim 9. In paragraph 36 Robson teaches that the sulfur content is at most 2000 ppm (0.2%) by mass, matching the range recited in claim 1. Robson teaches that the sulfur content is preferably zero, also meeting the sulfur content limitations of claims 2, 5, and 7. In paragraph 38 Robson teaches that the boron content is preferably greater than 2000 ppm (0.2%) by mass, and not greater than 3000 ppm (0.3%) by mass, falling within the range recited in claim 1(A). In paragraphs 68 and 73 Robson teaches that the boron content may arise from a borate ester, meeting the limitations of claim 1(A). In paragraph 33 Robson teaches that the phosphorus content is more preferably zero, meeting the limitation of claim 7 and

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implying that the composition contains no metal salts of dithiophosphoric acid, as recited in claim 1.

In paragraph 80, Robson teaches that the composition comprises a metal-based detergent, as recited in claim 3 and in paragraph 95 teaches that the metal-based detergent is preferably a salicylate, which is substantially sulfur-free as in claim 5. While Robson does not teach the metal ratio of the detergent, Robson does teach in paragraph 96 that the TBN of the detergent is in the range of 15 to 600. As a TBN of 15 is indicative of a metal ratio of about 1, the range of metal ratios of the detergents of Robson therefore overlaps or falls within the range recited in claim 4.

In paragraph 64, Robson teaches that Group III basestocks are a preferred basestock. Group II basestocks contain at least 90% saturates and therefore must contain 10% or less aromatics, meeting the limitations of claim 2.

The differences between Robson and the currently presented claims are:

i) Robson discloses in paragraph 134 that the composition can further contain an antioxidant, but does not specifically disclose ashless antioxidants, nor does Robson disclose the concentration of antioxidant. This relates to claim 1(B).

ii) Robson also discloses in paragraph 134 that the composition can comprise a dispersant, but does not specifically disclose ashless dispersants, nor does Robson disclose the concentration of dispersant. This relates to claim 6.

With respect to i), Emert teaches in column 70 lines 48-57 that lubricating compositions preferably contain an ashless antioxidant, and in the table in column 81

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(approximately line 23) teaches that compositions contain 0.01 to 5% by weight the antioxidant, meeting the limitations of claim 1(B).

With respect to ii), Emert teaches from column 38 line 47 through column 40 line 43 that the composition can contain an ashless dispersant, as in claim 6. While Emert does not explicitly disclose the nitrogen content of the composition, Emert does disclose in the table in column 81 (approximately line 24) that the composition comprises 0.1 to 10% by weight of the dispersant. Given that the molecular weight of the polymer used in the dispersant of Emert is preferably no greater than 4,000 (column 12 line 9), and it is reacted with a polyamine to form the dispersant, it is clear that the nitrogen content of the composition will overlap the range recited in claim 6.

The use of the ashless antioxidants and ashless dispersant of Emert in the composition of Robson therefore meets the limitations of claims 1-7 and 9. The limitation of claim 8 stating that the lubricating composition is for an internal combustion engine using a fuel having a sulfur content of 50 ppm by mass or less is merely an intended use recitation, and it is the examiner's position that the composition of Robson and Emert is capable of use in such an engine and therefore meets the claim. Additionally, that the use of these additives intrinsically improves the long drain performance of the composition, meeting claim 10 as all the structural limitations of the claim are met.

It would have been obvious to one of ordinary skill in the art to add the antioxidants and dispersants of Emert to the composition of Robson, in order to prevent oxidative degradation of the oil, and prevent the formation of deposits.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Robson in view of Emert as applied to claims 1-7 and 9-10 above, and further in view of Curtis (U.S. Pat. No. 2003/0220209).

The discussion of Robson in view of Emert in paragraph 9 above is incorporated here by reference. Robson and Emert disclose a lubricating composition used in an internal combustion engine meeting the limitations of claim 1, but does not disclose an internal combustion engine having a sulfur content of 50 ppm or less.

Curtis, in paragraph 1, discloses a lubricating composition for a diesel engine. In the reference's claim 1 Curtis discloses that the diesel engine may use a low-sulfur diesel fuel, and in paragraph 12 Curtis teaches that a low-sulfur diesel fuel contains 15 ppm or less of sulfur, within the range recited in claim 8. In paragraph 18 Curtis discloses that the composition can contain an antioxidant, and in paragraph 63 teaches that the composition can include a borate ester, the same additives that are present in the composition of Robson and Emert. In paragraphs 3 and 7 Curtis teaches that an amide of a carboxylic acid is also a useful additive.

It would have been obvious to one of ordinary skill in the art to include the amide of Curtis in the composition of Robson and Emert, and to use the resulting composition in a diesel engine taking low-sulfur diesel fuel, as Curtis teaches that a composition with similar components to those used by Robson and Emert is useful in such an engine.



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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Goloboy whose telephone number is 571-272-2476. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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